

5.—*Descriptions of Fishes from the Coast of Natal* (Part IV.*).
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THE following is a further contribution to the description of a collection of fishes from Natal.

FAMILY PERCIDAE.

GEN. LUTIANUS, Bl.

LUTIANUS QUINQUELINEARIS, Bl.

Ausl. Fisch. iv. p. 84, 1785.

Teeth, a pair of moderate-sized canines on premaxillaries; an outer row of curved canine-like teeth on each jaw, those on the upper jaw being the largest, villiform teeth in Λ -form on vomer, a band on palatines. Depth of body $2\frac{1}{2}$ times in total length excluding caudal, length of head 3 times. Snout equals diameter of eye, which is $3\frac{3}{10}$ times in length of head, and $1\frac{1}{4}$ times interorbital width; maxillary reaches to vertical of anterior third of orbits, the distance of the eye from its upper edge being a little more than $\frac{1}{2}$ diameter of orbit; vertical limb of preoperculum strongly emarginate, finely serrated, the angle rounded and with stronger serrations, lower limb strongly serrated; a strong opercular knob, middle spine of operculum strong; scapula serrated.

Dorsal xi 14; spines moderately strong, increasing in length to 4th, which is nearly $\frac{1}{2}$ length of head, remainder decreasing to the last, which about equals diameter of eye; longest soft rays equal $\frac{1}{2}$ the length of base of fin. Pectorals nearly as long as head, reaching to anal. Ventrals $\frac{2}{3}$ length of head, reaching to vent. Anal iii 8; 2nd spine strongest and longest, about the same length as longest

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dorsal spine; longest soft rays equal length of base of fin; lower edge of fin rounded. Caudal emarginate. Scales in oblique rows above the lateral line, in horizontal rows below it; superiorly they extend forward to above anterior third of eye; suborbital ring sealed and one or two scales on preorbital. Lat. l. 56, lat. tr. $\frac{8}{15}$.

Colour (of preserved specimen), pale brown, slightly darker above than below, with a more or less circular dark patch on lateral line below the last dorsal spines and the anterior rays; 3 narrow bluish streaks or lines from eye to below dorsal fin, one from upper edge of operculum to base of posterior soft rays of dorsal, one below it along the body traversing margin of caudal peduncle, another from opercular spine to base of caudal passing along middle of caudal peduncle.

One specimen, 96 mm. in length, from Mr. Romer Robinson, Natal.

GEN. EPINEPHELUS, Bl.

EPINEPHELUS PRAEOPERCULARIS, Blgr.

Proc. Zool. Soc. Lond. 1887, p. 654, 1887.

Teeth in narrow bands, in 2 series on the sides of the mandible; canines strong. Depth of body $2\frac{9}{10}$ times in total length excluding caudal, length of head $2\frac{3}{8}$ times. Snout $1\frac{3}{8}$ times diameter of eye, which is $5\frac{2}{5}$ times in length of head and equals interorbital width; lower jaw projecting; maxillary reaches scarcely to posterior margin of eye, the width of its distal extremity $\frac{4}{5}$ diameter of eye; vertical limb of preoperculum serrated, emarginate above the angle which is feebly produced and armed with strong spines; middle opercular spine nearer to lower than to upper, lower much further back than upper, opercular flap pointed; head nearly entirely covered with cycloid scales, maxillary naked. Gillrakers (removed in specimen).

Dorsal xi 15, originating above base of pectorals; 3rd spine longest, nearly $\frac{2}{3}$ length of head, last spine a little more than $\frac{1}{4}$ length of head; longest soft rays a little less than longest spine. Pectorals a little more than $\frac{1}{2}$ length of head. Ventrals a little more than $\frac{2}{5}$ length of head and not quite reaching anus. Anal iii 8; 2nd spine slightly longer and much stronger than 3rd, a little more than $\frac{2}{3}$ longest dorsal spine and much shorter than soft rays. Caudal truncate, $\frac{1}{2}$ length of head. Scales 125, ciliated. Lat. l. 68, lat. tr. $\frac{16}{54}$.

Colour (of preserved specimen), light greyish brown, darker above than below; sides with small dark spots sparsely scattered in irregular rows; 2 dark lines from lower and posterior margin of eye

passing downwards and backwards over preopercle to opercular margin.

One specimen, 358 mm. in length, from Mr. Romer Robinson, Natal.

EPINEPHELUS FLAVOCAERULEUS, Lacep.

Hist. nat. Poiss. iv. p. 367, 1802.

Var. *melanometopon*, Blkr.

Poll. & v. Dam. Faun. madag. iv. p. 17, 1874.

Teeth in narrow bands, in 2 series on the sides of the mandible, the inner row larger, a strong outer row on maxilla, inner teeth on symphysis of upper jaw long and sharp-pointed; canines small. Depth of body $2\frac{2}{5}$ times in total length excluding caudal, length of head $2\frac{1}{5}$ times. Snout $1\frac{3}{4}$ times diameter of eye, which is 6 times in length of head and $1\frac{2}{3}$ times in interorbital width; lower jaw projecting beyond upper, maxillary reaches to slightly beyond posterior margin of eye; preoperculum serrated on vertical limb, more coarsely so on its rounded angle which is feebly produced; middle spine of operculum nearer lower than upper, lower further back than upper, opercular flap pointed; gillrakers 18 on lower part of anterior arch; head nearly entirely covered with small cycloid scales, scales on posterior portion of maxilla.

Dorsal xi 16; spines moderately strong, 4th longest, $\frac{2}{5}$ length of head, remainder decreasing gradually to the last which is a little lower than adjoining ray. Pectorals $\frac{3}{5}$ length of head; ventrals a little shorter, not reaching anus. Anal iii 8; 2nd spine stronger but a little shorter than 3rd, which is a little more than $\frac{1}{4}$ length of head and $\frac{2}{3}$ longest soft rays. Caudal emarginate, $\frac{2}{3}$ length of head. Scales 130, those on body ctenoid, scales on chest and abdomen very small; 18 rows between lateral line and 6th dorsal spine. Lat. l. 65, lat. tr. $\frac{2}{6}$.

Colour (of preserved specimen), dark brown; pectorals yellow; caudal yellow, with black tips to lobes; soft dorsal and anal yellow-tipped on posterior rays; ventrals dark on upper side, light with a dark tip on lower side.

One specimen, 282 mm. in length, from Mr. Romer Robinson, Natal.

EPINEPHELUS MACULATUS, Bl.

Ausl. Fisch. iv. p. 96, pl. 242, fig. 3, 1790.

Teeth in narrow bands, in 2 series on sides of mandible, canines strong. Depth of body $3\frac{1}{5}$ times in total length excluding caudal,

length of head 3 times. Snout $1\frac{1}{2}$ times diameter of eye, which is 6 times in length of head; interorbital width $6\frac{7}{10}$ times in length of head; nostrils close together; lower jaw projecting; maxillary reaches to a little beyond posterior border of eye, width of its distal extremity $\frac{2}{3}$ diameter of eye; vertical limb of preoperculum finely serrated, obtusely angulate, a little produced at angle which is armed with enlarged serrae; middle opercular spine nearer to lower than to upper, lower further back than upper, opercular flap obtusely pointed; head, including maxillary, nearly entirely covered with small cycloid scales; gillrakers (removed in specimen).

Dorsal xi 17, originates above pectoral; 4th spine longest, nearly $\frac{1}{2}$ length of head, $1\frac{3}{5}$ as long as last spine and $1\frac{1}{3}$ as long as longest soft rays. Pectorals $\frac{3}{5}$ length of head. Ventrals $\frac{1}{2}$ length of head, reaching to anus. Anal iii 8; 2nd spine slightly shorter but much stronger than 3rd, which is $\frac{2}{5}$ longest dorsal spine; soft rays $\frac{2}{5}$ length of head. Caudal subtruncate, nearly $\frac{3}{5}$ length of head. Scales 110, ciliated. Lat. l. 58 (circa), $\frac{1}{2}$ †.

Colour (of preserved specimen), light brown; large dark spots in more or less longitudinal rows on body and on head, belly and isthmus without spots; pectoral fins with large dark spots in irregular lines, outer half whitish; dorsal and anal fins blackish.

One specimen, 358 mm. in length, from Mr. Romer Robinson, Natal.

GEN. DENTEX, Cuv.

DENTEX RIVULATUS, Rüpp.

Neue Wirbelt. Fisch. p. 116, pl. 29, f. 2, 1837.

Teeth, canines strong, a series of conical teeth on the sides. Depth of body $2\frac{2}{5}$ times in total length excluding caudal, length of head $3\frac{1}{10}$ times. Snout $1\frac{1}{3}$ times diameter of eye, which is 3 times in length of head and $\frac{4}{5}$ interorbital width; maxillary reaches to anterior nostril; preorbital naked, its depth about equal to diameter of eye; 4 series of scales between preorbital and angle of preoperculum; hind limb of preopercle feebly emarginate, entire, with a few serrations at its rounded angle; opercle with a blunt inconspicuous spine.

Dorsal x 10; spines increasing in length to 3rd, which is $\frac{1}{3}$ length of head, the remainder decreasing in length; middle soft rays about $1\frac{1}{3}$ times as long as longest spine. Pectorals a little more than $\frac{4}{5}$

length of head, reaching to anal. Ventrals $\frac{3}{4}$ length of head, reaching a little beyond vent. Anal iii 10; 2nd spine stronger but shorter than 3rd, which is $\frac{1}{5}$ length of longest dorsal spine. Caudal forked. Lat. l. 47, lat. tr. $\frac{7}{17}$.

Colour (of preserved specimen), uniform grey, top of head darker and brown; a narrow curved brown band across base of pectorals and a faint one across nape; a dark brown spot on upper margin of each eye; one or two curving dark lines on preorbital.

One specimen, 294 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY SPARIDAE.

GEN. LETHRINUS, Cuv.

LETHRINUS CHRYSOSTOMUS, Rich.

Voy. Erebus and Terror, Fishes, p. 118, pl. 60, figs. 6 and 7, 1846.

Teeth, 4 moderately strong canines on each jaw; the lateral teeth on each jaw pointed in front but more or less rounded posteriorly, especially those of the upper jaw, the last one being very molar-like. Depth of body $2\frac{2}{3}$ times in total length excluding caudal, length of head $2\frac{1}{2}$ times. Snout $2\frac{2}{3}$ times diameter of eye, which is $4\frac{2}{3}$ times in length of head and $1\frac{1}{3}$ times in interorbital width; cleft of mouth lateral, maxillary scarcely extends to vertical of anterior nostril and is concealed by preorbital, the height of the latter being twice the diameter of the eye; preoperculum entire, the angle rounded; operculum with 2 blunt inconspicuous spines; a slight protuberance before upper anterior angle of orbits.

Dorsal x 9; spines strong, increasing in length to 3rd or 4th, which is $\frac{1}{3}$ length of head; longest soft rays nearly $\frac{2}{3}$ length of head. Pectorals as long as head, anterior rays longest and reaching beyond origin of anal. Ventrals $\frac{2}{3}$ length of head, reaching to anal. Anal iii 8; 3rd spine longest, about $\frac{9}{10}$ longest spine of dorsal. Caudal emarginate, scaly on base. Lat. l. 47, lat. tr. $\frac{6}{17}$.

Colour (of preserved specimen), brown, silvery beneath; scales, especially on upper part of the body, with a black centre forming longitudinal streaks on the body; fins whitish.

One specimen, 336 mm. in length, from Mr. Romer Robinson, Natal.

GEN. CYPHOSUS, Lacep.

CYPHOSUS CINERASCENS, Forsk.

Descr. Anim., No. 66, p. 53, 1775.

Teeth, a single row of flat cutting teeth, their horizontal portion longer than their vertical; minute rounded teeth on vomer and palatines. Depth of body $2\frac{3}{10}$ times in total length excluding caudal, length of head $4\frac{1}{10}$ times. Snout $1\frac{3}{10}$ times diameter of eye, which is $3\frac{1}{2}$ times in length of head and $1\frac{1}{2}$ times in interorbital width; maxillary reaches to vertical of anterior margin of eye; preoperculum feebly serrated at angle, which is rounded; body oblong, compressed, a slight swelling in front of orbits; snout obtuse.

Dorsal xi 14; spines flexible, increasing in length to 5th, which is $\frac{1}{3}$ length of head and about same length as longest soft ray. Pectorals $\frac{3}{5}$ length of head and about same length as ventrals. Anal iii 13; 3rd spine longest, a little more than $\frac{1}{2}$ length of longest dorsal spine and $\frac{1}{2}$ as long as longest soft ray of anal; both anal and soft dorsal are covered with small scales. Caudal forked. Lat. l. 64, lat. tr. $\frac{19}{9}$; 17 scales between lateral line and ventral, 10 between lateral line and 6th spine of dorsal.

Colour (of preserved specimen), light olive-brown, darker above than below; a dark line between each row of scales; fins darkish; a light band below eye.

One specimen, 228 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY, TRACHINIDAE.

GEN. LATILUS, C. & V.

LATILUS DOLIATUS, C. & V.

Hist. Nat. Poiss. v. p. 371, 1830.

Teeth, a series of sharp-pointed teeth, with 4 canines at symphysis and a posterior canine on each side of upper jaw, and 2 posterior canines on each side of lower jaw. Depth of body $3\frac{3}{5}$ times in total length excluding caudal, length of head 4 times. Snout as long as eye, which is prominent, placed high in the head, and is $2\frac{3}{4}$ times in length of head; interorbital width $\frac{7}{8}$ diameter of eye. Profile of head flat on top, rounded before orbits and descend-

ing abruptly to end of snout; a ridge on nape from above centre of orbits to origin of dorsal; preorbital depth $\frac{2}{3}$ diameter of eye; preoperculum finely serrated on its vertical limb and on the rounded angle; cleft of mouth slightly oblique, maxillary reaches to vertical of anterior margin of eye.

Dorsal vi 16; commences above base of pectorals, spinous portion lower than soft; posterior soft rays longest, $\frac{2}{3}$ length of head, the 14th ray prolonged and nearly $1\frac{1}{4}$ times as high as adjacent rays. Pectorals falcate, reaching to anal, the 6th ray longest and as long as head. Ventrals $\frac{1}{2}$ as long as head, not reaching to vent. Anal ii 12; rays increasing in length to the penultimate, which is about $\frac{3}{5}$ length of head. Caudal emarginate, a little more than $\frac{3}{4}$ length of head. Scales ciliated, extending over opercles and cheeks, and on top of head as far as the centre of the orbits. Lat. l. 102, lat. tr. $\frac{8}{5}$.

Colour (of preserved specimen), reddish; 15 dark brown bands across upper part of body; a black opercular spot.

One specimen, 198 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) off the Natal coast, in 50 fms.; Tugela River mouth, N. $19\frac{1}{2}$ miles.

FAMILY BATRACHIDAE.

GEN. BATRACHUS, Klein.

BATRACHUS APIATUS, C. & V.

Hist. Nat. Poiss. xii. p. 477, 1837.

Teeth in 3 rows on each jaw anteriorly, a single series laterally, the teeth on mandibles largest and directed a little inwards; an irregular double row on vomer, a single series on palatines. Depth of body $5\frac{1}{4}$ times in total length excluding caudal, length of head $3\frac{3}{10}$ times. Longitudinal diameter of eye $4\frac{3}{10}$ times in length of head, and equal to snout, which is broad, depressed, and surmounted by short tentacles which are most distinct along the mandibles; vertical diameter of eye $5\frac{2}{3}$ times in length of head and equal to the width of the bony ridge between the orbits, maxillary reaches to vertical of posterior margin of eye, lower jaw projects; no tentacles above the orbits; 4 backwardly directed spines on gill-covers, situated 2 on the operculum and 2 on sub-operculum; anterior nostril with a tubular flap ending in a bunch of filaments; head with loose folds of skin on nape.

Dorsal iii 20; 1st dorsal triangular, middle spine $\frac{1}{5}$ length of head; soft dorsal higher than spinous, longest rays about $\frac{1}{2}$ length of head. Pectorals $\frac{2}{3}$ length of head, reaching to anal; no foramen in the axil. Ventrals $\frac{2}{3}$ length of head. Anal 14. Caudal truncate. A series of pores along the body, with a slight vertical fold of skin on each.

Colour (of preserved specimen), yellowish, dotted with faint dark spots and with 3 or 4 faint dark cross-bands; tips of dorsal and anal rays brown; pectorals spotted with brown in irregular cross bands.

One specimen, 142 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) off the Natal coast, in 54 fms.; Port Natal, W. by N. $6\frac{1}{2}$ miles.

BATRACHUS DIEMENSIS, Lesueur.

Journ. Acad. Nat. Sc. Philad. iii. p. 402, 1823.

Teeth in 3 rows anteriorly on each jaw, a single series laterally; a band on vomer and palatines. Depth of body 4 times in total length excluding caudal, length of head $2\frac{3}{4}$ times; head broad, its width nearly equalling its length. Longitudinal diameter of eye 3 times in length of head, vertical diameter $3\frac{2}{5}$ times length of head and $1\frac{1}{3}$ times as long as snout; width of bony ridge between the the eyes narrow, $8\frac{1}{2}$ times in length of head; maxillary reaches to vertical of middle of eyes, lower jaw projects; no tentacles above the orbits; gill-covers with 4 spines, 2 of which belong to the operculum and 2 to the sub-operculum; anterior nostrils with a bunch of filaments on each; no tentacles on snout, which is short, obtuse, and its upper border parabolic; a row of large open pores along lower edge of mandibles, on preorbital, across opercles, and round orbits.

Dorsal iii 20; 1st dorsal triangular, middle spine nearly $\frac{1}{4}$ length of head. Pectorals $\frac{3}{4}$ length of head, reaching to anal, no foramen in the axil. Ventrals with outer ray much longer than inner, tapering, $\frac{1}{5}$ length of head. Anal 16. Caudal truncate. Loose folds of skin on head and cheeks, and on the body, especially along base of anal fin.

Colour (of preserved specimen), brown; spinous dorsal dark, with a dark patch on anterior soft rays; pectorals covered with minute dark spots forming irregular bars.

One specimen, 45 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) off the Natal coast, in 50 fms.; Umhlangakulu River, NW. by N. $7\frac{1}{2}$ miles.

FAMILY PEDICULATI.

GEN. LOPHIUS, L.

LOPHIUS UPSICEPHALUS, Smith.

Illustr. Zool. S. Afr. p. 9, pl. 9, 1849.

Teeth arranged in 2 alternate series; a minute patch on vomer, with a strong tooth on each side; a single series of strong, slightly recurved teeth on palatines. Head disproportionately large, depressed, broad and flat. Depth of body $2\frac{1}{4}$ times in total length excluding caudal, length of head $1\frac{7}{10}$ times; width of head nearly $\frac{9}{10}$ its length. Snout $1\frac{1}{2}$ times as long as eye, which is $6\frac{2}{3}$ times in length of head and about equals the interorbital width; lower jaw projects beyond upper, cleft of mouth wide and reaches to vertical of anterior margin of eye, upper lip fringed with a row of cirri, lower lip with a fringe of branched filaments; 4 strong spines on pre-orbital, 2 on each side of symphysis of jaw; orbital ridge with coarse serrations, with a strong spine behind posterior upper angle of each orbit; a short, strong, upright spine on preoperculum; a strong humeral spine with 3 points; a spine on top of head on each side.

Dorsal iii + iii 8; the first 3 spines distinct and situated on the head; the 1st consists of a simple filament, $\frac{3}{10}$ length of head, terminating in a few cirri and a long simple flap, and is inserted just behind the lip; the 2nd spine rises close behind it and is longer, nearly $\frac{2}{3}$ length of head, with a row of soft spines on its anterior margin, and with short stalks or filaments branching off the main stem; the 3rd spine is about the same height as the 1st and is inserted midway between the posterior margin of dorsal fin and 2nd spine, which latter it resembles, but the branches are fewer and less developed; the 4th spine is a little more than $\frac{2}{3}$ length of head, originates in line with base of humeral spine, and is a little apart from but connected by a low membrane with the remaining 2 spines. Pectorals $\frac{1}{4}$ length of head, the carpal bones being much produced form a sort of arm to the fin. Ventrals about same length as pectorals. Anal 6; posterior rays longest and about $\frac{1}{3}$ length of head. Caudal truncate, nearly $\frac{1}{2}$ length of head.

Colour (of preserved specimen), light yellowish brown, with a few small dark spots; membrane of the 3 posterior spines of dorsal blackish.

One specimen, 77 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) off the Natal coast, in 54 fms.; Cape Natal, W. by N. $6\frac{1}{2}$ miles.

FAMILY COTTIDAE.

GEN. HOPLICHTHYS, Günth.

HOPLICHTHYS LANGSDORFI, C. & V.

Hist. Nat. Poiss. iv. p. 264, pl. 81, 1829.

Teeth, a narrow band of minute villiform teeth on each jaw and on vomer and palatines. Depth of body $3\frac{1}{3}$ to $3\frac{3}{4}$ times in total length excluding caudal, length of head 3 to $3\frac{1}{3}$ times; width of head between base of preopercular spines $3\frac{1}{2}$ to 4 times. Head greatly flattened; snout wide, produced, and rounded anteriorly. 3 to $3\frac{2}{5}$ times in length of head; diameter of eye 4 to $4\frac{3}{10}$ times in length of head; interorbital space very narrow, deeply channelled; mouth inferior, the lower jaw shorter than upper, everywhere included; maxillary reaches to vertical of anterior margin of eye. Lateral profile of head formed by a sharp dentigerous ridge divided into 4 lobes, in each of which the posterior spine is longest and strongest; preoperculum strongly produced at the angle where it terminates in a strong sharp spine, vertical margin marked by a double ridge with strong serrations; opercle with 2 strong ridges radiating from its upper angle, each armed with strong serrations and ending in a strong opercular spine; a strong humeral spine; orbital ridge strongly and coarsely serrated; occiput with a sharp spine pointing backwards, and with a cluster of 3 smaller spines anteriorly on each side of nape.

Dorsal vi 15; 1st dorsal longest anteriorly, its 1st spine strongest and about $\frac{1}{4}$ length of head; 2nd dorsal higher than the 1st and with the rays slightly filamentous. Pectorals 13 + 3; with 3 simple rays almost free but joined to each other and to the rest of the fin by a very low membrane at the extreme base; upper rays filamentous, $\frac{2}{3}$ length of head. Ventrals a little more than $\frac{2}{5}$ length of head, inserted in advance of pectorals. Anal 17; similar to soft dorsal. Body naked with the exception of a single series of large lateral plates, 27 in number, which extend over the greater part of the back and sides from occiput to caudal; each plate is armed at its inner angle with a strong backward-pointing spine, with 2 much smaller ones below it.

Colour (of preserved specimens), light yellowish brown; a black ocellus on membrane of 1st dorsal from 2nd to 4th spines; 2 dark patches crossing the back through posterior extremity of soft dorsal; ends of pectoral rays dark; caudal with 2 or 3 faint dark bars.

Three specimens, 56 mm., 109 mm., 143 mm. in length respectively, procured by the Cape Government trawler *P. Faure* (s.) off the coast of Natal, in 63 fms.; Tugela River mouth N. 22 miles.

GEN. LEPIDOTRIGLA, Günth.

LEPIDOTRIGLA FAUREI, n. sp.

Teeth in narrow villiform bands on jaws and vomer. Depth of body 4 to $4\frac{1}{10}$ times in total length excluding caudal, length of head $3\frac{1}{10}$ to $3\frac{1}{2}$ times. Snout slightly elongate, feebly concave, $1\frac{1}{3}$ to $1\frac{1}{2}$ times diameter of eye, which is $3\frac{1}{2}$ to $3\frac{2}{5}$ times in length of head and $1\frac{2}{5}$ times interorbital width; space between orbits concave, superciliary ridges strong, with 2 small spines at supero-anterior angle of orbit and with a deep groove behind each orbit; preorbital projecting feebly beyond snout, with 2 strong spines on each side anteriorly; preoperculum striated and granulated, angle feebly produced and jagged but without distinct spines; operculum striated, with a strong spine; a strong humeral spine; suprascapula with serrated upper margin and a ridge ending in a strong spine; maxillary reaches vertical of anterior margin of eye.

Dorsal viii 16, the first 3 or first 2 spines serrated anteriorly; 3rd spine longest, $\frac{7}{10}$ length of head and equal to the distance between point of snout and posterior margin of eye. Pectorals 11 + 3, 1 to $1\frac{1}{2}$ times length of head and reaching to vertical from 5th or 6th anal ray. Ventrals $\frac{1}{2}$ length of head. Anal 16, situated below soft dorsal, of equal length but lower. Caudal deeply emarginate, $\frac{2}{3}$ to $\frac{1}{2}$ length of head. Scales of moderate size, with spines on their free margin. Twenty-three spines along base of dorsal fin. Lat. l. 60-61, with radiating tubes but without armature. Lat. tr. $\frac{3-3\frac{1}{2}}{13}$.

Colour (of preserved specimens), uniform pale yellow, or grey with a green tinge on head and spinous dorsal; pectorals dark underneath, with or without diagonal rows of dark ocelli near base.

Three specimens, procured by the Cape Government trawler *P. Faure* (s.) off Natal coast; 1 of 120 mm. in length, in 40 fms., Tugela River mouth N. by W. $\frac{3}{4}$ W. $15\frac{1}{2}$ miles; 2 of 120 mm. and 146 mm. in length respectively, Tugela River mouth N. 22 miles, in 63 fms.

LEPIDOTRIGLA NATALENSIS, n. sp.

Teeth in villiform bands on jaws and vomer. Depth of body $5\frac{1}{10}$ times in total length excluding caudal, length of head $3\frac{1}{4}$ times. Snout elongate, upper profile straight, $1\frac{1}{2}$ times diameter of eye, which is $3\frac{2}{3}$ times in length of head and $1\frac{1}{3}$ times interorbital width; space between orbits concave, superciliary ridges strong with 2 inconspicuous spines at supero-anterior angle of orbits and with a short deep groove behind each orbit; preorbital flattened, truncated anteriorly and armed with a row of strong spines on the margin; preoperculum radiated and striated, with a small flat inconspicuous spine at the angle; operculum radiated and striated, with a strong spine; a strong humeral ridge ending in a spine; suprascapula serrated on its upper margin, with a prominent ridge ending in a strong spine, and with a short detached ridge between it and the orbit; maxillary reaches to vertical of anterior margin of eye.

Dorsal ix 17, first 3 spines serrated anteriorly; 3rd spine longest, $\frac{3}{5}$ length of head and equal to the distance between point of snout and posterior margin of eye. Pectorals 11 + 3, $1\frac{1}{10}$ times length of head, reaching to vertical from 5th anal ray. Ventrals $\frac{1}{5}$ length of head. Anal 15, situated below soft dorsal, of equal length but lower. Caudal emarginate, $\frac{7}{10}$ length of head. Scales cycloid, large. Twenty-four prominent spines along base of dorsal fin. Lat. l. 58, with radiating tubes but no armature, the scales larger than on rest of the body. Lat. tr. $\frac{3\frac{1}{2}}{13}$.

Colour (of preserved specimen), uniform grey; pectorals dark underneath.

One specimen, 130 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) off the Natal coast, in 40 fms.; Tugela River mouth N. by W. $\frac{1}{2}$ W. 16 miles.

GEN. TRIGLA, L.

TRIGLA NATALENSIS, n. sp.

Teeth in villiform bands on jaws and vomer. Depth of body $5\frac{1}{2}$ times in total length excluding caudal, length of head $3\frac{1}{2}$ times. Snout elongate, slightly concave, $1\frac{2}{3}$ times diameter of eye, which is $3\frac{1}{2}$ times in length of head and nearly twice the interorbital width, the space between the orbits concave; preorbital obtuse anteriorly, granulated and striated, with a ridge across to the preopercular angle which ends in a short spine; opercular spine feeble; a strong

humeral spine; suprascapula with a strong granular ridge ending in a blunt spine and with a small detached ridge between it and the orbit; 2 strong spines on supero-anterior angle of orbits; maxillary reaches scarcely to vertical of anterior margin of eye.

Dorsal ix 15; first 3 spines tubercular; 2nd spine longest, a little more than $\frac{1}{2}$ length of head and equal to the distance between anterior nostril and posterior margin of eye. Pectorals 10 + 3, a little longer than head, reaching to vertical from the 5th ray of anal. Ventrals a little more than $\frac{3}{4}$ head, reaching to anal. Anal 15, situated below soft dorsal and of same length, but not so high. Caudal emarginate, $\frac{1}{5}$ length of head. Scales very small, cycloid. Twenty-five spines along base of dorsal fin. Lat. l. 65. (The lateral line on the right side of this specimen bifurcates about the middle of the caudal peduncle, one branch passing upwards and backwards to the median line of the back at the caudal.)

Colour (of preserved specimen), pale greyish brown, slightly darker above than below, head with a reddish tinge; pectorals dark brown underneath on the upper portion and pale yellow on the lower, with a few small ocellated spots; caudal and ventrals yellowish, dorsal whitish.

One specimen, 204 mm. in length, procured by the Cape Government trawler *P. Fauve* (s.) off the Natal coast, in 48 fms.; Cape Natal W. by N. $6\frac{1}{2}$ miles.

TRIGLA CAPENSIS, C. & V.

Hist. Nat. Poiss. iv. p. 53, 1829.

Teeth in villiform bands on jaws and vomer. Depth of body 5 to $5\frac{2}{3}$ times in total length excluding caudal, length of head $3\frac{3}{10}$ to $3\frac{1}{2}$ times. Snout elongate, upper profile straight, about twice diameter of eye, which is 4 times in length of head and $1\frac{2}{3}$ to $1\frac{4}{5}$ times interorbital width, the space between the orbits concave; preorbital produced anteriorly and ending in about 4 prominent points or spines, with a keel along the lower margin extending across preoperculum to the angle where it ends in 2 spines, one at the angle and a shorter diverging one just below it, many radiations branch upwards from a point about midway along this keel or ridge; operculum with a sharp strong spine; suprascapula with a strong spine and with a short detached ridge between it and the orbit; 2 spines on supero-anterior angle of orbits; maxillary reaching to vertical of anterior margin of eye.

Dorsal ix 16; 1st spine smooth or slightly granular; 2nd spine

longest, $\frac{1}{2}$ to $\frac{2}{5}$ length of head and slightly more than the distance between anterior nostril and angle of preoperculum. Pectorals 11+3, 1 to $1\frac{3}{10}$ length of head, reaching to the vertical from 6th or 7th ray of dorsal. Ventrals $\frac{3}{4}$ to $\frac{1}{2}$ length of head. Anal 16, similar to soft dorsal. Caudal emarginate or slightly forked, $\frac{7}{10}$ to $\frac{3}{4}$ length of head. Scales very small, cycloid. Twenty-four to 25 spines along the base of dorsal fin. Lat. l. 70–74, without armature.

Colour (of preserved specimens), greyish, darker above than below; pectorals blackish, with a few oval spots on the lower half. The smallest specimen was of a uniform light green, the fins—except the pectorals—being of a darker green; the pectorals were blackish with a few white spots.

One specimen, 104 mm. in length, from Durban, Natal.

Three specimens, procured by the Cape Government trawler *P. Faure* (s.); 1 of 234 mm. in length, from Inner Harbour, Durban; 1 of 238 mm. in length, caught in 40 fms., Tugela River mouth N. by W. $\frac{1}{2}$ W., 16 miles; 1 of 254 mm. in length, caught in 46 fms., Tugela River mouth N. by W., 18 miles.

TRIGLA PERONI, C. & V.

Hist. Nat. Poiss. iv. p. 53, 1829.

Teeth in narrow villiform bands on jaws and vomer. Depth of body 5 times in total length excluding caudal, length of head $3\frac{1}{2}$ times. Snout elongate, upper profile nearly straight, $1\frac{1}{2}$ times diameter of eye, which is $3\frac{2}{3}$ times in length of head and nearly twice interorbital width; space between the orbits concave; pre-orbital strongly striated and produced anteriorly into 2 broad plates slightly projecting beyond snout, each with about 4 obtuse points and some fine serrations, a keel or ridge extends along the lower margin across preopercle to the angle of the latter where it is toothed or roughened and ends in a sharp spine with a smaller diverging spine below it; opercle with a sharp spine; a strong sharp humeral spine; suprascapula with a strong spine; orbital ridge strongly marked, with 2 strong spines at supero-anterior angle of eye, the posterior angle bluntly produced and crenellated; maxillary reaches to vertical of anterior margin of eye.

Dorsal ix 16; 1st spine smooth, about the same length as 2nd, which is $\frac{1}{2}$ length of head and equals the distance between anterior nostril and angle of preoperculum. Pectorals 11+3; $1\frac{1}{4}$ times length of head and reaching to vertical from 7th ray of dorsal. Ventrals about as long as head, reaching to anal. Anal 16, similar

to soft dorsal. Caudal truncate, $\frac{3}{4}$ length of head. Scales small, cycloid. A series of 24 spines along each side of base of dorsal fins. Lat. l. 65, without armature.

Colour (of preserved specimen), light or pale reddish brown, with a few small dark specks on body; pectorals black, with indistinct whitish spots; ventrals and tip of spinous dorsal blackish; distal extremity of caudal blackish.

One specimen, 74 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY SCOMBRIDÆ.

GEN. ECHENEIS, L.

ECHENEIS NAUCRATES, L.

Syst. Nat. 10th ed., p. 261, 1758.

Teeth, mandible pointed and covered superiorly with rows of villiform teeth directed backwards and forming a more or less triangular toothed space in advance of the upper jaw, which latter is pointed; a similar band of villiform teeth in upper jaw; a band on vomer and palatines; a curved row on tongue. Depth of body $11\frac{2}{3}$ times in total length excluding caudal, breadth of body between pectorals $8\frac{1}{4}$ times; length of head, with disk nearly $3\frac{2}{3}$ times, without disk $5\frac{1}{5}$ times; width of head nearly $\frac{1}{2}$ its length. Eyes transversely oval, directed obliquely outwards and downwards, distance apart superiorly $3\frac{1}{2}$ diameters from end of snout, inferiorly $3\frac{2}{3}$ diameters; 9 times in length of head with disk. Lower jaw longer than upper, maxillary reaches to vertical of 3rd lamina of disk.

Dorsal xxiii 37; 1st dorsal forming an elliptical disk rather broader posteriorly than anteriorly, its greatest width nearly $\frac{2}{5}$ its length, which is nearly 4 times in total length excluding caudal; 23 transverse laminae, each with a toothed posterior margin, the teeth being in 3 rows, a smooth elevation dividing the disk along the central line; the anterior laminae are directed slightly forwards, the succeeding ones nearly transverse, the posterior directed slightly backwards; external to the disk is a moderately wide fleshy membrane, which posteriorly extends to the distal half of the pectorals and anteriorly does not quite reach point of snout. The 2nd dorsal is situated opposite the anal, commencing midway

between point of snout and base of caudal; highest anteriorly, about $\frac{2}{5}$ length of disk. Pectorals $\frac{2}{3}$ length of disk, situated behind head in line with 19th lamina of disk. Ventrals $\frac{3}{5}$ length of disk, equal to the distance between point of snout and posterior margin of eye. Anal 37; similar to soft dorsal but higher anteriorly, Caudal with emarginations, nearly $\frac{2}{5}$ length of disk.

Colour (of preserved specimen), uniform reddish brown; external margin of caudal and anterior tips of dorsal and anal edged with white; pectorals deep brown; centre of caudal nearly black.

One specimen, 348 mm. in length, from Durban Museum.

FAMILY GOBIIDÆ.

GEN. GOBIUS, L.

GOBIUS OBSCURUS, Peters.

Wieg. Arch. 1855, p. 250.

Teeth small, villiform, outer row slightly enlarged; no canines. Depth of body 5 times in total length excluding caudal, length of head $3\frac{1}{2}$ to $3\frac{2}{3}$ times; height of head $\frac{3}{4}$ its breadth, which is contained $1\frac{1}{10}$ to $1\frac{1}{8}$ times in its length. Snout slightly convex, $1\frac{1}{7}$ to $1\frac{2}{3}$ times diameter of eye, which occupies the 2nd quarter of length of head, is 1 to $1\frac{3}{4}$ times interorbital width and 3 times in length of head; cleft of mouth slightly oblique, maxillary reaches to below anterior margin of eye and does not ascend to the level of the eye; lips thick, the upper slightly overhanging lower.

Dorsal vi, i 8-9; 2nd spine of 1st dorsal longest, nearly $\frac{1}{3}$ to $\frac{1}{2}$ length of head; soft rays longest posteriorly, $1\frac{1}{10}$ to $1\frac{1}{4}$ height of longest spine. Pectorals $\frac{4}{5}$ length of head, reaching to anus, the upper rays silk-like. Ventrals about same length as pectorals. Anal i 8; similar to soft dorsal but not quite as high. Caudal wedge-shaped, $\frac{4}{5}$ length of head. Scales feebly ctenoid, extending on to crown of head; 16 anterior to 1st dorsal, 14 between origin of 2nd dorsal and anal. Lat. l. 38.

Colour (of preserved specimens), pale brown, with dark spots on body; dorsal, anal and caudal with small dark spots; a dark spot at upper angle of axil of pectorals.

Two specimens, 44 mm. 80 mm. in length respectively, from Mr. Romer Robinson, Natal.

GوبيUS MALABARICUS, Day.

Proc. Zool. Lond. 1865, p. 27; Fishes Malab. p. 111, pl. 7, fig. 2, 1865.

Teeth in a villiform band, the outer row enlarged and strong; no canines. Depth of body nearly 5 times in total length excluding caudal, length of head $3\frac{1}{2}$ times; height of head about $\frac{9}{10}$ its width, which is contained $1\frac{1}{4}$ times in its length. Snout slightly longer than the eye, which is $4\frac{2}{3}$ times in length of head and $1\frac{1}{2}$ times interorbital width; cleft of mouth oblique, lower jaw longer than upper, maxillary extends to below middle of eye. Head naked, 2 rows of pores or warts on each side of lower jaw and many rows on cheeks.

Dorsal vi, i 10; 2nd and 3rd spines of 1st dorsal highest, nearly $\frac{1}{2}$ length of head, and about same height as posterior rays of 2nd dorsal, which is lower anteriorly, the rays gradually increasing in length. Pectorals $\frac{1}{2}$ length of head, scarcely reaching anal. Ventrals $\frac{3}{4}$ length of head, not reaching vent. Anal i 10; similar to soft dorsal but lower. Caudal rounded, $5\frac{3}{10}$ times in total length. Lat. 1. 50. Sixteen rows of scales between bases of 2nd dorsal and anal fins, 10 rows anterior to 1st dorsal fin.

Colour (of preserved specimen), brown, with dark irregular spots on body and head; dorsals with a light band running along lower third of each fin, with a row of dark spots above and below it; pectorals with a dark curved band on upper half and a dark crescentic band with a white upper border on lower part of fin stretching across base of first 7 or 8 rays.

One specimen, 73 mm. in length, from Mr. Romer Robinson, Natal.

GEN. PERIOPHTHALMUS, Bl. Schn.

PERIOPHTHALMUS KOELREUTERI (Pall.).

Spic. Zool. viii. p. 8, pl. 2, fig. 1, 1769.

Teeth strong, conical, pointed. Depth of body 5 to 6 times in total length excluding caudal, length of head 4 to $4\frac{1}{4}$ times; width of head $\frac{3}{4}$ to $\frac{2}{3}$ its length. Snout $1\frac{1}{2}$ to $1\frac{1}{4}$ times as long as eye, profile very abrupt, the skin forming fleshy flaps; eyes very prominent, situated on upper margin of head, diameter 4 times in length of head and twice the interorbital width, outer eyelid well developed; cleft of mouth almost horizontal, upper lip slightly over-

hangs lower, maxillary extends to below vertical of anterior third of eye.

Dorsal xvi-xvii 11-12; anterior rays of 1st dorsal longest and about $\frac{2}{3}$ length of head; 2nd dorsal not as high as 1st. Pectorals $\frac{2}{3}$ length of head, with a long, scaly, muscular base. Ventrals very small, almost entirely separated from each other. Anal 12. Caudal with its lower edge obliquely truncated. Scales 75-80.

Colour (of preserved specimens), greyish or bluish brown; lower half of dorsal fins with numerous white spots, above them on the 1st dorsal is a dark band or patch—deeper on anterior rays—near to and parallel with the whitish margin of the fin; on the 2nd dorsal the band is narrow, brown, and edged with white above and below; anal fin whitish. Two of the specimens have indistinct brown cross-bars, and many silvery specks on body.

Two specimens, 66 mm. 78 mm. in length respectively, from Mr. Romer Robinson, Natal.

Two specimens, 66 mm. 72 mm. in length respectively, from Durban Bay.

GEN. TRYPACHEN, C. & V.

TRYPACHEN VAGINA (Bl. & Schn.).

Syst. Ichth. p. 73, No. 20, 1801.

Teeth, an outer row of rather distantly placed, moderately long, conical, feebly curved teeth on either jaw, behind which is a single series of small teeth on the upper jaw and 2 rows on the lower. Depth of body 8 to $8\frac{1}{5}$ times in total length excluding caudal, length of head $6\frac{1}{2}$ to $6\frac{2}{5}$ times. Body elongated, compressed; occipital crest elevated; width of head $\frac{2}{3}$ to $\frac{7}{10}$ its length, height slightly more than its length behind the eyes. Snout $3\frac{3}{4}$ to $3\frac{4}{5}$ times in length of head and 3 times diameter of eye, which is very small and situated in anterior fourth of head; interorbital width $1\frac{1}{2}$ times diameter of eye; cleft of mouth oblique, lower jaw longer than upper, maxillary reaches to vertical of anterior margin of eye.

Dorsal vi 43-46; commences a little behind pectorals, spines and rays about $\frac{1}{4}$ length of head, posterior rays filamentous. Pectorals $\frac{3}{10}$ length of head, the lower 5 rays short and unbranched. Ventrals a little longer than pectorals. Anal 44-46, similar to soft dorsal. Caudal pointed. Dorsal and anal fins confluent with caudal. Scales 70, cycloid, striated, in rather irregular rows, lightest at their edge and sometimes depressed in their centre.

Colour (of preserved specimens), uniform flesh-colour; fins whitish.

Two specimens, 83 mm. 114 mm. in length respectively, procured by the Cape Government trawler *P. Faure* (s.) in 12-14 fms., off South Head of Tugela River, Natal.

FAMILY MUGILIDAE.

GEN. MYXUS, Günth.

MYXUS BARNARDI, n. sp.

Teeth fine, villiform, in a single series on each jaw, those of the upper jaw overlapping those of the lower; a narrow cross band on vomer. Depth of body $3\frac{3}{4}$ times in total length excluding caudal, length of head 3 times. Snout as long as diameter of eye, moderately depressed, its upper profile ascending in the same curve in which the lower descends; eye with an adipose lid more strongly developed anteriorly than posteriorly, diameter of eye $4\frac{2}{5}$ times in length of head and $1\frac{2}{5}$ times in interorbital width, which is slightly convex; preorbital serrated inferiorly and posteriorly; nostrils as far apart as they are distant from the eye and snout respectively; cleft of mouth $\frac{3}{4}$ as deep as broad, slightly oblique, upper lip overlapping lower which is sharp-edged; maxillary scarcely reaching vertical of anterior margin of eye, concealed; mandibles meet at an obtuse angle, notched at symphysis; uncovered space below the chin lanceolate.

Dorsal iv, i 8, commences midway between front edge of eye and base of caudal; 1st spine of anterior dorsal longest and strongest, about $\frac{1}{2}$ length of head; base of 2nd dorsal $\frac{3}{5}$ its height, which about equals that of longest spine of 1st dorsal. Pectorals inserted above middle of depth of body and reaching to vertical of origin of 1st dorsal fin, $\frac{3}{5}$ length of head. Ventrals inserted in vertical of midway between base of pectorals and origin of dorsal fin. Anal iii 8; having its anterior half situated before origin of 1st dorsal, 3rd spine $\frac{2}{5}$ length of longest spine of dorsal. Depth of free portion of tail $3\frac{1}{5}$ times in length of head. Lat. l. 41, lat. tr. 15; 23 rows of scales between snout and origin of 1st dorsal fin; the 11th and 23rd scales of the lateral line correspond to the origin of the 1st and 2nd dorsal fins; no enlarged axillary scale; vertical fins not scaly.

Colour (of preserved specimen), silvery, dark above; scales with

dark streaks on centre, forming indistinct longitudinal lines on the body; top of head and snout covered with minute dark brown specks.

One specimen, 47 in length, from Durban Bay; K. H. Barnard.

FAMILY CHIASMODONTIDAE.

GEN. CHAMPSODON, Günth.

CHAMPSODON CAPENSIS, Regan.

Trans. Linn. Soc. Lond. Zool. xii. p. 244, 1908.

Fine, curved, villiform teeth on each jaw; a patch on vomer, some of the teeth on each side anteriorly being enlarged; tongue strongly toothed. Depth of body $5\frac{2}{5}$ to 6 times in total length excluding caudal, length of head $3\frac{1}{5}$ to 4 times; depth of head about $\frac{2}{3}$ its length. Snout $3\frac{1}{2}$ to 4 times in length of head, distance from tip of snout to end of maxillary about $\frac{2}{3}$ length of head; eye $4\frac{1}{2}$ to 5 times in length of head, situated in a notch of the upper profile, with one or two filaments on the eyeball at its superior posterior angle, least distance between eye and maxillary much less than diameter of eye; interorbital width about $\frac{7}{10}$ diameter of eye, feebly concave, with 2 rows of pores down the centre; cleft of mouth exceedingly wide, about $\frac{2}{3}$ length of head and extending beyond posterior margin of eye, lower jaw projecting and bent upwards; premaxillaries with a double notch anteriorly; preoperculum with a few fine serrations on vertical limb, angle armed with a strong lanceolate spine curving upwards; opercular margin very thin, fringed and striated; preorbital with 2 sharp diverging spines on anterior margin; a ridge from snout passing along upper margin of each orbit and across nape to suprascapula, where it ends in a small spine; one or two detached ridges on head behind eye.

Dorsal v 18-20; spines of 1st dorsal feeble, slightly filamentous, highest anteriorly and about $\frac{2}{5}$ to $\frac{1}{2}$ length of head; soft dorsal higher than spinous, rays slightly filamentous. Pectorals small, $\frac{2}{5}$ length of head. Ventrals $\frac{4}{5}$ length of head, reaching to vent, 3rd and 4th branched rays longest and considerably higher than the 1st. Anal 17, similar to soft dorsal. Caudal truncate, about $\frac{1}{5}$ length of head. Scales small, strongly toothed on their posterior margin; covering

the whole body, head, maxillary, cheeks, and opercles; 2 lateral lines marked by rows of pores and both provided with 24 vertical branches, also marked by a row of pores and passing over the back.

Colour (of preserved specimens), light brown, darker above than below; a dark patch on base of caudal.

Three specimens, 76 mm. 70 mm. 64 mm. in length respectively, procured by the Cape Government trawler *P. Faure* (s.) off the Natal coast; the two larger in 46 fms., Tugela River mouth N. by W. 18 miles, the smallest in 54 fms., Cape Natal W. by N. $6\frac{1}{2}$ miles.

FAMILY CENTRISCIDAE.

GEN. CENTRISCUS, L.

CENTRISCUS HUMEROSUS, Rich.

Voy. Erebus and Terror, Fishes, p. 56, pl. 34, figs. 5 and 6, 1846.

(Trumpet-fish, Bellows-fish.)

Height of the body contained $1\frac{1}{3}$ times in the distance of the operculum from the base of the caudal fin, the length of the head is slightly less than its distance from the caudal. Head elevated posteriorly, compressed into a ridge above and produced anteriorly into a long compressed tube terminating in a small mouth; cleft of mouth oblique, extremity of lower jaw prominent, maxillary broad and triangular. Eye large, equals length of postocular part of head, the skin which covers the iris is provided with small ctenoid scales except on anterior portion; margin of orbit smooth; interorbital space smooth, slightly convex, nearly $\frac{2}{5}$ diameter of eye in width; nostrils close together, situated one before the other at a short distance from the orbit; preoperculum with its posterior margin descending obliquely forward, partly confluent with orbit, and indistinctly denticulated or roughened, the angle strongly produced backwards. The scales advance very far on the rostral tube. The body is strongly compressed and much elevated, its greatest depth is above the ventrals; the upper profile makes a slight bulge on the nape, behind which is a patch of bristles, and then ascends gradually to dorsal fin, descending abruptly from 2nd spine to the free portion of the tail; lower profile of body semicircular between throat and end of anal fin.

Dorsal vii 14; 1st spine minute, its distance from caudal fin $\frac{4}{5}$ its distance from occiput; 2nd spine very strong, compressed, striated, grooved along posterior margin and movable, its length equals $\frac{1}{3}$ distance of opercle from caudal, and the spine points obliquely upwards and backwards; the remaining spines are short and their connecting membrane strong. Soft dorsal higher than long, its distance from caudal equals $\frac{3}{4}$ the length of its base; anterior rays highest. Pectorals with a short oblique base, inserted about the middle of the depth of the body and extending almost to end of ventrals. Ventral fins small, close together and received into a common groove on the belly. Anal 17; commences immediately behind vent in the vertical from the posterior spines of dorsal and extends as far back as posterior margin of soft dorsal, but is much lower. Caudal truncate, composed of 9 undivided rays, the others on the upper and lower side of its base being rudimentary. Body covered with small rough scales, each of which ends in a weak spine posteriorly; 2 series of bony plates on the sides of the back, each of 4 plates which have a centre with vertical and horizontal stripes radiating from it; the lower series commences in the scapular region, the upper runs in a parallel line above it. Margin of thorax cuirassed with 3 similar plates, the belly with a single series; edge of thorax and belly sharp.

Colour (of preserved specimen), yellowish brown, slightly darker above than below.

One specimen, 197 mm. in length, from Durban Museum.

FAMILY LABRIDAE.

GEN. PLATYGLOSSUS, Klein.

PLATYGLOSSUS ROBINSONI, n. sp.

Teeth, a posterior canine, 4 strong canines at symphysis of each jaw, slightly curved and directed a little outwards. Depth of body $3\frac{3}{5}$ times in total length excluding caudal, length of head 4 times. Snout $2\frac{5}{8}$ times in length of head and $1\frac{7}{10}$ times diameter of eye, which is nearly 5 times in length of head and about $1\frac{1}{4}$ times in interorbital width; jaws about equal; maxillary reaches to vertical of anterior nostril.

Dorsal ix 13; spines weak, slightly increasing in length to the last which is a little more than $\frac{2}{5}$ length of head; soft rays gradually

increasing in length from the last spine, the longest ray being $\frac{3}{5}$ length of head. Pectorals nearly $\frac{3}{4}$ length of head. Ventrals a little more than $\frac{1}{5}$ length of head. Anal iii 12, similar to soft dorsal; 3rd spine longest, $\frac{2}{5}$ length of longest spine of dorsal. Caudal with the outer lobes slightly produced, the posterior margin of fin enclosed between them being rounded in the middle. Lat. l. 27, lat. tr. $\frac{2}{3}$; tubes of lateral line strongly marked and radiate. Scales comparatively large, cycloid; 2 rows of scales on the cheeks, the rest of the head naked.

Colour (of preserved specimen), uniform yellowish brown; dorsal fin with a black oval spot at the base of the membrane between 1st and 2nd spines, and with a dark basal band, the upper edge of which is emarginate and edged with a narrow pale yellow border, a similar but narrower band occurs on the upper third of the fin, the distal margin of the fin is whitish, and there is a row of 8 or 9 small ocellated olive spots near the extremity of the posterior soft rays; anal with 2 longitudinal bands similar to those on the dorsal fin; caudal with curved transverse bands and reticulations; 2 dark streaks from eye to mouth on each side, a dark streak across chin from one corner of the mouth to the other, 2 or 3 irregular dark streaks on the cheeks; 2 more or less indistinct dark streaks from the preoperculum to the caudal, the upper one following the dorsal curve; scales dark in the centre.

One specimen, 133 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY GADIDAE.

GEN. BREGMACEROS, Thomps.

BREGMACEROS MACCLELLANDI, Thomps.

Charlesw. Mag. Nat. Hist. iv. p. 184, fig., 1840.

Teeth minute on both jaws, a few on vomer. Depth of body 7 times in total length excluding caudal, length of head about 6 times. Body fusiform, compressed posteriorly; snout equals interorbital width, 4 times in length of head; eye $3\frac{1}{2}$ times in length of head; upper jaw slightly the longer, extending to behind vertical of centre of eye.

Dorsal i, $16 + x + 15$; 1st dorsal rises on the occiput in the form of a single slender ray, which is slightly longer than the head and

filamentous; 2nd dorsal commences in the middle third of the total length and is highest in front, the 4th ray longest and about the length of the head, each ray is unbranched but articulated and slender, the membranes deeply notched, the last 10 rays are very short and slender, almost like a distinct fin, the posterior rays are lengthened and extend nearly to the base of the caudal. The dorsal and anal rays can be laid backwards in a groove formed by the scales along the base of these fins. Pectorals $\frac{7}{10}$ length of head. Ventrals arise under the throat; 6 rays, the outer 3 being compressed and elongated, $3\frac{1}{2}$ times in length of head and reaching to about 21st ray of anal. Anal $22 + x + 20$; similar to 2nd dorsal. The vent is situated at the end of the anterior third of the total length. Scales cycloid, small. Lat. l. 64, lat. tr. $\frac{6}{8}$.

Colour (of preserved specimen), silvery, back brownish, sides faint greenish yellow; minutely dotted with brown.

One specimen, 59 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) 11 miles off Cape Natal; depth 185 fms.

FAMILY OPHIDIIDAE.

GEN. SELACHOPHIDIUM, Gilchr.

SELACHOPHIDIUM GUENTHERI, Gilchr.

Mar. Inv. S. Afric. ii. 1903, p. 209, pl. 17.

Teeth in a villiform band on each jaw, and on vomer and palatines. Depth of body $6\frac{3}{4}$ times in total length excluding caudal, length of head $5\frac{2}{5}$ times. Longitudinal diameter of eye $2\frac{2}{3}$ times in length of head; vertical diameter of eye $4\frac{7}{10}$ times in length of head, scarcely shorter than length of snout and slightly longer than interorbital width; head conical, slightly depressed in front of the eyes; snout wedge-shaped, blunt and projecting beyond mouth; maxillary reaches to vertical of posterior third of eye, dilated posteriorly; glandular tissue on preoperculum, with one large pore; a sharp spine on operculum; mouth large, inferior, horizontal; gillrakers 15 on lower part of anterior arch, those next the angle long, the last 7 mere knobs. Inside of mouth and gill-chambers black.

Dorsal 115; commence a little behind pectorals, about equal in height throughout, rays about $\frac{1}{3}$ length of head. Pectorals

$\frac{7}{10}$ length of head. Ventrals situated behind posterior edge of preoperculum, consisting of a single ray about $\frac{1}{2}$ the length of the head. Anal 88; commences immediately behind vent, which is situated well in front of the middle of the body. The dorsal and anal fins are confluent; there are thin scales on anterior part of dorsal, reaching to about $\frac{1}{2}$ its height. Lateral line slightly curved, runs parallel with upper margin of body, well marked anteriorly but only to be traced with difficulty to the caudal; about 12 series of scales between lateral line and base of middle of dorsal fin.

Colour (of preserved specimen), uniform light reddish brown; caudal and posterior extremity of dorsal and anal fins black-edged.

One specimen, 216 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) in 440 fms. off the Natal coast; Cape Natal, N. by E. 24 miles.

GEN. NEOBYTHITES, Goode & Bean.

NEOBYTHITES MACROPS, Günth.

Challenger Reports, xxii. p. 102, pl. 20, fig. A, 1887.

Teeth in villiform bands; vomerine teeth in a chevron-shaped band, palatine teeth in a long band which tapers posteriorly and in the middle is slightly wider than the maxillary band. Depth of body $5\frac{3}{4}$ times in total length, length of head 5 times. Eye rather large, its longitudinal diameter $4\frac{1}{2}$ times in length of head and equal to length of snout, its vertical diameter $5\frac{2}{3}$ times in length of head and slightly less than the interorbital width; interocular space flat and scaly; head oblong, as deep as broad, the obtusely rounded snout overlapping the lower jaw; maxillary reaches to vertical of posterior margin of eye; preoperculum armed with 2 short spines, one at the angle and the other a little above it, both pointing backwards; operculum with a strong finely pointed spine; mouth large, inferior, horizontal; upper part of head covered with small scales nearly to extremity of snout, small scales on skin between rami of mandibles. Gillrakers, 15 on lower part of anterior arch, those at the angle very long and the remainder decreasing in length until the last 6 exist as mere knobs.

Dorsal 100 (circa), commences behind root of pectorals; rays about equal in length throughout, $\frac{1}{3}$ length of head. Pectorals $\frac{7}{10}$ length of head. Ventrals bifid, the inner filament being the

higher and $\frac{1}{2}$ length of head; inserted nearly opposite to angle of preoperculum, somewhat distant from each other and not reaching as far back as the pectorals do. Anal 85; commences immediately behind vent, which is situated well in front of the middle of the body. Dorsal and anal fins confluent with caudal. Thin scales on anterior part of dorsal fin, reaching to about $\frac{1}{2}$ its height. Lateral line slightly curved, runs parallel to upper margin of body, very indistinctly marked posteriorly; about 8 or 9 scales in transverse series between it and base of 1st ray of dorsal fin.

Colour (of preserved specimen), light yellowish brown, speckled; anal, caudal and posterior extremity of dorsal fin black-edged.

One specimen, 184 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) off Natal coast, in 440 fms.; Cape Natal, N. by E. 24 miles.

FAMILY SYNGNATHIDAE.

GEN. SYNGNATHUS, Art.

SYNGNATHUS ZANZIBARENSIS, Günth.

Fishes Zanzibar, p. 140, pl. 20, fig. 5. 1887.

Depth of body slightly greater than its breadth. Length of head nearly 11 times in total length; distance from snout to vent about $\frac{1}{2}$ the distance between the vent and caudal; snout $5\frac{3}{5}$ times as long as eye, which is 10 times in length of head and slightly less than interorbital width; interocular space concave; operculum swollen, finely radiated; occiput and nape with a median ridge.

Dorsal with 26 rays, which are slightly less than depth of body; base of fin elevated and stands on 6 rings; length of base equals length of snout from centre of eye. Pectorals $\frac{1}{10}$ length of head. Anal minute and situated immediately behind vent, which is placed below the middle of the dorsal fin. Caudal minute. Osseous rings 22, 63. Trunk rather deeper than broad, with a slight swelling in the middle; osseous shields without spines; tail tetrahedral, tapering but not terminating in a point, width of upper surface slightly less than that of lower and the former feebly and the latter distinctly concave.

Colour (of preserved specimen), brown, with a few darker spots on sides and snout.

One specimen, 270 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) $2\frac{1}{2}$ miles off Umhlanga River, on the Natal coast ; depth 22 fms.

FAMILY SCLERODERMI.

GEN. OSTRACION, L.

OSTRACION CORNUTUS, L.

Syst. Nat., 10th ed., p. 331, 1758.

Carapace 4-ridged, forming a broad bridge across the back of the tail ; a long conical spine above each orbit, directed forwards ; each ventral ridge terminates posteriorly in a similar spine pointing backwards ; each dorsal ridge with a slight prominence, which is not developed into a spine, in the middle of its length ; median line of the back slightly raised in the middle but not forming a spine ; interorbital space very concave ; profile of snout high and concave ; 10 teeth on each jaw, conical and rather weak ; eye $\frac{1}{2}$ length of snout and $2\frac{2}{3}$ times in distance from snout to gill-opening. Nine scutes from gill-opening to tail, 5-6 transversely, 7 across ventral surface. Depth of body $\frac{3}{4}$ its greatest width.

Dorsal 9 ; situated wholly in advance of anal ; highest anteriorly, nearly 5 times in total length excluding caudal. Pectorals $\frac{3}{4}$ length of head. Anal 9 ; similar to dorsal but slightly lower. Caudal truncated, $\frac{2}{5}$ length of body. Surface of scutes granulated and striated, but without prickles or spines.

Colour (of preserved specimen), light brown on back, yellowish on sides and belly.

One specimen, 73 mm. in length, from Natal ; Dr. Gilchrist.

OSTRACION DIAPHANUS, Bl. Schn.

Syst. Ichth., p. 501, 1801.

Carapace 4-ridged, the bridge across back of tail formed by 4 transverse series of scutes ; a pair of short conical spines above the orbit, feebly divergent and pointing forwards ; a short curved spine in the middle of the back, with a shorter spine on each dorsal ridge opposite to it ; ventral ridge terminating posteriorly in a short strong spine

and with 2 smaller spines on the side, one below the dorsal fin and the other below the spine on the dorsal ridge; interorbital space very concave; profile of snout high and slightly concave; 10 teeth on upper jaw, 8 on lower; eye nearly $\frac{1}{2}$ length of snout and 3 times in distance between point of snout and gill-opening. Ten scutes between gill-opening and tail, 6 transversely, 10 across ventral surface. Depth of body slightly less than its greatest width.

Dorsal 9; situated wholly in advance of anal, highest anteriorly, $5\frac{2}{3}$ times in length of body. Pectorals $\frac{7}{10}$ length of head. Anal 9; similar to dorsal but slightly lower. Caudal truncate, slightly longer than head and $\frac{3}{10}$ length of body. Surface of scutes granulated but without prickles or spines.

Colour (of preserved specimen), dark bluish above, reddish yellow on belly.

One specimen, 84 mm. in length, from Natal; Dr. Gilchrist.

OSTRACION CONCATENATUS, Bl.

Ausl. Fisch, pl. 131, 1785.

Carapace 3-ridged, forming a broad continuous bridge across the back of the tail. Dorsal ridge with 2 compressed spines placed close together; each ventral ridge with 4 compressed spines, 2 of which are near each other and in the vertical of the dorsal spines, the others being one at each extremity of the ventral ridge; supra-orbital edge with 2 sharp spines pointing backwards and outwards, (All these spines become less prominent with age, and only traces of them can be discovered in adult examples (8-10 inches), Günther.) Interorbital space feebly concave; profile of snout high and concave; eye $\frac{2}{3}$ length of snout and $2\frac{1}{4}$ times in distance between point of snout and gill-opening; 8 scutes from gill-opening to tail, 8 transversely, 10 across ventral surface. Depth of body about equals its width.

Dorsal 9, situated in advance of anal; highest anteriorly, $4\frac{1}{2}$ times in total length excluding caudal. Pectorals more than $\frac{1}{2}$ length of head. Anal 10, similar to dorsal and situated immediately behind anus. Caudal truncated, $\frac{1}{4}$ length of body. Surface of scutes striated, but without prickles or spines.

Colour (of preserved specimen), uniform whitish.

One specimen (immature), 17 mm. in length, procured by the Cape Government trawler *P. Faure* (s.) in 20 fms., off Natal coast; False Bluff, N.E., $4\frac{3}{4}$ miles.

FAMILY GYMNODONTES.

GEN. TETRODON, L.

TETRODON IMMACULATUS, Bl. Schn.

Syst. Ichth., p. 507, 1801.

Teeth equal on both jaws. Length of head nearly equals its distance from dorsal fin and is $2\frac{3}{4}$ times in the total length excluding caudal. Eyes comparatively small, situated high up and about midway between gill-opening and end of snout, and $3\frac{2}{5}$ times in length of snout, which is slightly more than $\frac{1}{2}$ length of head; inter-orbital space flat, its width slightly less than length of snout, the osseous part about 3 times diameter of eye in width; 2 solid nasal papillae on each side of an impervious nasal fossa.

Dorsal 11; situated in posterior third of distance from snout to base of caudal fin, length of base of fin equals $\frac{1}{2}$ its height, anterior rays longest and $\frac{1}{2}$ length of head. Pectorals 18; a little more than $\frac{1}{3}$ length of head. Anal 11; situated midway between posterior margin of dorsal fin and base of caudal, of similar shape to dorsal fin but smaller. Caudal truncated, $\frac{1}{4}$ length of body. Spines cover the whole body except the snout and the caudal peduncle, strongest and most numerous on the belly.

Colour (of preserved specimen), olive-brown on back, shading to light brown on sides, belly white; pectorals straw-colour, situated in the middle of a large round black spot which also extends on to their base and covers the gill-openings; anus in a black ring.

One specimen, 310 mm. in length, from Mr. Romer Robinson, Natal.

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